

WHAT IS CLAIMED IS:

1. A control apparatus for an electric power steering system, which controls a motor for applying assist steering torque to a steering line of a vehicle at least according to steering torque signal of the steering line detected by a steering torque sensor, vehicle velocity signal detected by a vehicle velocity sensor and motor current signal detected by a motor current detector, the control apparatus comprising:

a target current controller for setting target current signal for driving the motor according to the steering torque signal;

a deviation calculator for computing a deviation between the target current and motor current signals;

a deviation adjuster for adjusting the deviation with a variable gain according to the vehicle velocity signal;

a proportional element for executing proportional control for the motor according to the deviation;

an integral element for executing integral control for the motor according to the deviation; and

a gain adjuster for adjusting the gain according to a differential of the steering torque signal.

2. A control apparatus according to claim1 wherein the gain adjuster is adapted to adjust the gain according to the differential of steering torque when the differential reaches equal to or greater than a predetermined value.

3. A method for controlling an electric power steering system, which

controls a motor for applying assist steering torque to a steering line of a vehicle at least according to steering torque signal of the steering line detected by a steering torque sensor, vehicle velocity signal detected by a vehicle velocity sensor and motor current signal detected by a motor current detector, the method comprising the steps of:

setting target current signal for driving the motor according to the steering torque signal;

computing a deviation between the target current and motor current signals;

adjusting the deviation with a variable gain according to the vehicle velocity signal;

executing proportional control for the motor according to the deviation;

executing integral control for the motor according to the deviation; and

adjusting the gain according to a differential of the steering torque signal.